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The aim of this study was to investigate evolutionary processes which are defined as the gradual changes in inherited characteristics over a period of successive generations. Factors such as gene flow, genetic drift and/or selection in a natural environment, may act as driving forces for the changes in phenotype. In order to study these very aspects, the species *Cepae nemorails* was observed. *Cepae nemorails* is a commonly studied species by evolutionary geneticists due to their shell pattern being highly polymorphic and simply inherited (J. S Jones et al, 2013). Polymorphism is the variation of phenotypes that exist within organisms of the same genotype.

*Cepae nemorails* also known as the grove snail or brown-lipped snail are one of the most abundant air-breathing land snails in Europe. The gastropod shells are typically made of calcium carbonate and commonly differ in colour and the number of bands present. The colours can be brown, pink or yellow and the dark bands can range from none to as many as five. Adult *Cepaea nemoralis* are able to be distinguished by a presence of a dark rim at the lip of the shell opening. These are commonly found in areas which are rich in calcium.

Studies have been conducted which highlight the importance of calcium levels in soil and the direct effect it has on the abundance of snails in a particular area. Calcium is essential for the development and maintenance of a healthy shell. An example of such a study was conducted which found a positive correlation between snail species richness and the concentration of calcium in the soil, and that multiple snail families were found in areas with the highest levels of calcium. (Beier et al, 2010)

A field experiment was conducted in Monk’s Riseborough in an area high in calcium, in order to see how polymorphism in *Cepae nemorails* is affected by both evolutionary and environmental factors. The purpose of this study was to investigate which selective mechanisms influence genetic variation within the species. The experiment was designed to ensure environmental factors such as the latitude and altitude of the habitat were carefully controlled. This was done to prevent a statistical error which is generated by considering data sets to be independent when they are interdependent, known as pseudoreplication.